Kindly substitute the following for paragraph [0022]:

[0022] First annular electrode 24 and second annular electrode 26 may be coupled to tubular portion 28 in an interference fit. However, a threaded portion 30, 32 on respective first annular electrode 24 and second annular electrode 26 may be included. Threaded portions 30, 32 correspond with threaded portions 34, 36 on the inside diameter of tubular portion 28. To ease assembly, the first annular electrode 24 and second annular electrode 26 may be screwed into tubular portion 28.

A2

Kindly substitute the following for paragraph [0026]:

[0026] To further increase the reliability of the system, a seal material may be positioned between first annular electrode 24 and tubular portion 28 and between second annular electrode 26 and tubular portion 28. One type of suitable material is a thread-seal tape, such as Teflon tape, which may be positioned on threaded portions 30, 32, 34, and 36. Because the cell constant is well defined, a known resistor used within the calibration circuit as will be further described below, may be used to calibrate the system.

A3

Kindly substitute the following for paragraph [0028]:

[0028] Square wave generator circuit 40 may, for example, produce a square wave of about 300 Hz. Although various types of square wave generating circuits may be used, an operational amplifier-based circuit is illustrated. Square wave generator circuit 40 has an operational amplifier U_1 having an inverting input 52, a non-inverting input 54, and an output 56. A capacitor C_1, which in this case is 0.015μF is coupled to inverting input 52. A resistor R_1 is coupled between inverting input 52 and output 56. Output 56 is coupled to ground through a first resistor R_2 and R_3. The node between R_2 and R_3 is common node N_2. Common node N_2 is coupled to non-inverting input 54. The common node at output 56 is coupled to synchronous detection circuit through resistor R_4. Each of the resistors R_1, R_2, R_3 and R_4 in this example is 100kΩ. Buffer circuit is also formed of an operational amplifier U_2.

A4

A4 con't

Operational amplifier U_2 has an inverting input 58, a non-inverting input 60, and an output 62. Output 62 is coupled to first annular electrode 24, which in turn is coupled to inverting input 58. Node N_1 is coupled to ground through three resistors R_5, R_6 and R_7. In the present example, R_5 is 68kΩ and R_7 is 2.2kΩ. R_6 is a 5 kΩ potentiometer having an adjustable terminal 64 coupled to non-inverting input 60. As will be further described below, the conductivity gain adjustment may be provided through adjustment of the adjusting terminal 64 of resistor R_6.

<u>In the claims:</u>

Sub B1

<u>Kindly substitute the following for pending claim 1</u>:

A5

1. (Amended) A conductivity sensor comprising:

a first annular electrode having a first inner diameter;

a second annular electrode having the first inner diameter; and

a tubular portion disposed axially between said first electrode and said second electrode, said tubular portion defining a sensor cell with said first annular electrode and said second annular electrode;

said cell having a second inner diameter that is greater than said first inner diameter and a cell length between said first electrode and said second electrode.

Sub B1

<u>Kindly substitute the following for pending claim 4</u>:

A6

4. (Amended) A conductivity sensor as recited in claim 1 further comprising a control circuit generating an output corresponding to a conductivity of a fluid between said first annular electrode and said second annular electrode.

Sub B1

<u>Kindly substitute the following for pending claim 8</u>:

A7

8. (Amended) A conductivity sensor as recited in claim 7 wherein said gain adjustment circuit is coupled to said first electrode.